OUTCOME EVALUATION
SEVENTH ANNUAL REPORT

Submitted to:

Director David A. Gaspar and
ADJC Leadership Team

ADJC Research and Development
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EXECUTIVE SUMMARY

The Research and Development (R/D) Division and the National Council on Crime and Delinquency (NCCD) are proud to present the results of the Arizona Department of Juvenile Corrections (ADJC) *Seventh Annual Outcome Study*. Director Gaspar and the ADJC Leadership Team are committed to measuring the success of agency efforts to redirect the delinquent habits of the juveniles committed to our care, and the outcome studies are evidence of that commitment. To date, we have tracked seven (1996-2001) contemporary ADJC release cohorts totaling 6,064 juveniles. ADJC measures recidivism as a return to custody with the ADJC or the Arizona Department of Corrections (ADC).

The latest figures show that 82.2% of the juveniles released in 2001 did not recidivate within one year of their release, and 64% of the juveniles released in 2000 did not recidivate within two years of their release. The success rates are impressive because many of these juvenile offenders constitute Arizona's most troubled youth, and we are tracking them during a time when they are most likely to commit additional crimes. The latest results also show that only 19.8% of the juveniles released in 1999 were sentenced to an Arizona prison within three years of their release. This represents the third consecutive decline in the percentage of ADJC releases sentenced to prison within three years. This achievement is impressive when one considers that the estimated[1] monetary value of saving one high-risk youth from becoming a career criminal ranges between $1.7 and $2.3 million.

The latest figures also show a decrease in the 12-month recidivism rates between the 2000 (27.5%) and 2001(17.8%) release cohorts. The decrease is due largely to the establishment of a new ADJC parole assessment (PA) program. This secure, community-based program was established to provide intensive assessment services to juveniles who were having trouble complying with their parole plans. A recent increase in parole returns was driven, in part, by a request from several Arizona juvenile judges for ADJC to hold parolees accountable for their delinquent actions, and ADJC was proactive with this population when it established the PA program in 2001. In 2002, almost half of the

juveniles failing in their supervision plans were placed in the PA program. Juveniles assigned to the PA program spent an average of only 48.5 days in this community based secure facility, which is considerably less than the 201.5 days that parole revocations spent in an ADJC secure facility. Overall, the PA program has succeeded in helping ADJC hold parolees accountable; has increased the parolees chances of being successful in the community; and has reduced the bed-space needs of the department, allowing funds to be redirected and utilized to enhance other programming efforts.

Many ADJC releases have cycled through the Arizona juvenile justice system and have failed less restrictive consequences, such as probation and/or intensive probation[2]. Indeed, fully 72% of the 2001 releases had four or more juvenile court adjudications, many of them for felony-level offenses. Given their past, it is likely that future juvenile/criminal sanctions for ADJC releases will include some form of secure custody. Thus, return to custody is the appropriate recidivism metric for ADJC releases.

In the past, NCCD staff have endeavored to report on how ADJC's recidivism rates compare to others. Unfortunately, they were unable to provide updated information before the publication deadline for this report. For the time being, this report includes the results of research NCCD conducted in 2002; the report will be modified with the updated comparisons as soon as possible.

A recent comparison of state return-to-custody rates shows that Arizona's rates compare very favorably to those of most other states using the same definition of recidivism. These favorable results, in fact, may reflect the relative effectiveness of the programs and services employed with juvenile offenders in Arizona compared with those employed in other states. However, this comparison has a number of limitations that require interpretations to be made with considerable caution. First, drawing conclusions on differential effectiveness of programming and services is limited by the fact that information on the relative types, intensity, and duration of the interventions from state to state is not readily available. In addition, using the return-to-custody definition of

recidivism may underestimate the actual rates of subsequent delinquent or criminal behavior to unknown and variable degrees from state to state. This underestimation is due, in part, to the number of delinquent or criminal actions that remain unreported or cannot be attributed to a particular offender. Finally, differences in return-to-custody rates may result from differences in the characteristics of the juvenile offenders under the jurisdiction of different state agencies. For all of these reasons, conclusions from state-to-state comparisons must be reached with considerable caution.

Director Gaspar and the Leadership Team expressed a keen interest in converting recidivism rates into useful management information. Leadership Team members, Secure School Superintendents, and Community Corrections Division managers were consulted over the last two years to determine their concerns regarding recidivism. As a result of their desire to integrate recidivism study results into ADJC management practices, the report contains the results of an exploratory effort to calculate institutional effectiveness. This exploratory effort builds upon prior NCCD and R/D research and was designed to make recidivism research relevant to staff working directly with juveniles. The measure of institutional effectiveness introduced in this report consists of a comparison between expected and actual recidivism rates. Expected recidivism rates vary across the ADJC institutions based on the percentage of releases from each institution displaying the characteristics that have demonstrated a statistically significant relationship with recidivism. A comparison of expected to actual recidivism rates yields a trial measure of institutional effectiveness. The Black Canyon School was deemed most effective and the Catalina Mountain School least effective according to this trial technique. Section 2b of the report describes this trial technique in more detail. In addition, the report contains results designed to assist Parole Officers allocate their time effectively among the numerous juveniles they are charged with assisting. The S*urvival Analysis* completed for this study demonstrated that the monthly pattern of recidivism for the 2001 release cohort across the first 12 months after release was stable, and that age and risk score were excellent indicators of propensity for parole failure and recidivism. Section 2d describes the results of this endeavor in more detail.

The report is organized into the following sections:

I. Characteristics of the 2001, or latest, release cohort to be studied and comparisons of the 12-, 24-, and 36-month recidivism rates for the respective release cohorts

II. Specific recidivism rates by ADJC Secure School and results of an analysis of school effectiveness; specific recidivism rates of ADJC Parole Offices and the results of a monthly Survival Analysis for the 2001 releases

III. A review of the ADJC Parole Assessment program and research results relative to seven specific questions on recidivism

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A. 2001 RELEASE COHORT

In most ways, the 2001 release cohort was similar to the five earlier ADJC release cohorts studied. This section presents the results of an analysis of the similarities and differences between the 2001 releases and prior releases.

Table 1: Age at Release by Year of Release

	1996	1997	1998	1999	2000	2001
9-13	2.3%	1.3%	1.7%	1.4%	1.4%	0.7%
14	10.1%	6.5%	6.6%	6.7%	5.1%	6.7%
15	21.1%	18.1%	18.3%	16.1%	16%	13.2%
16	27.8%	29.1%	24.8%	25.8%	26.1%	24.5%
17	37.2%	42.7%	48.6%	49.8%	34.7%	33.2%
18	1.6%	2.3%	0.1%	0.3%	16.7%[3]	21.6%
Total	100% (n=827)	100% (n=1,095)	100% (n=1,268)	100% (n=1,040)	100% (n=945)	100% (n=888)
Average	15.9	16.1	16.1	16.2	16.4	16.5
Median	16	16	16	17	17	17

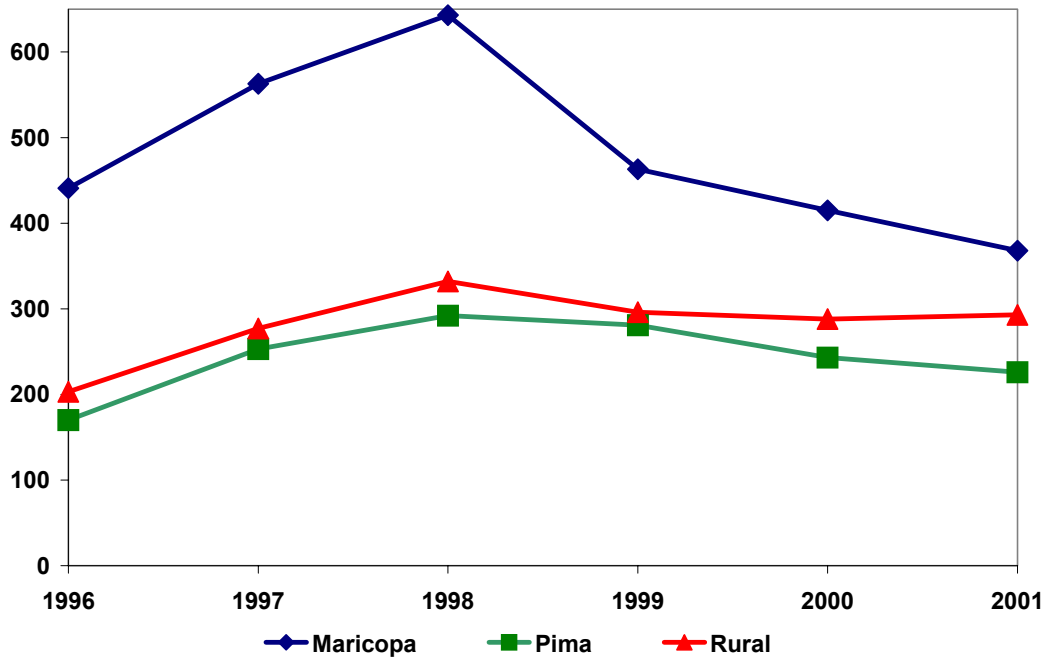
The demographic character of the 2001 releases differed only slightly from those of the five previous release cohorts**.** Indeed, the 2001 releases continued three previous trends: (1) the ADJC released older juveniles, (2) more juveniles were from rural Arizona counties, and (3) juveniles stayed longer in ADJC secure facilities.

As displayed in Table 1, the average age of ADJC releases increased between 1996 and 2001, and the percentage of releases who were 17 or 18 years old at the time of release increased during this period as well. While Maricopa County had a plurality of releases

(41.4%), the percentage of releases from the two urban Arizona counties (Maricopa and Pima) has been decreasing since 1998 and the percentage from the rural counties has been increasing since 1999 (see Figure 1). As displayed in Figures 2 and 3, the percentage of releases who spent seven or more months nearly doubled from 35% in 1996 to 64% in 2001. The increase in their secure care length-of-stay may have been, in part, a reaction to the ADJC's request of Arizona juvenile court judges to discontinue committing juveniles for extremely short court-ordered mandatory minimum sentences. ADJC staff believe that extremely short lengths of stay do not provide the department with an adequate amount of time to classify and work with the serious juvenile offenders we receive.

The vast majority of ADJC releases were male, and females accounted for approximately 10% of the total. More than three-quarters of the releases between 1996 and 2001 were male, and the 2001 release cohort posted an increase (+1.4%) in the percentage of releases who were male. Almost two-thirds (62.8%) of the releases were minorities, and most of those (72%) were Hispanic[4]. While the percentage of Hispanic releases increased in 2001 to 45.3%, relatively few changes were noted in the percentage of Caucasian, African American, or Asian releases. After reaching a high of 6% in 1999, the percentage of Native Americans released from ADJC in 2001 decreased for the second year in a row.

Figure 1: ADJC Releases by County



Almost half (47.9%) of the 2001 releases were placed in ADJC originally for Property Offenses, with Crimes Against Persons being (18.6%) the second largest category. Drug offenders (16.9%) and Public Order offenders (10.1%) also constituted a large group. Table 2 reveals the relative stability in type of committing offenses of the releases, and it also shows a steady increase in the percentage of drug, public order, and "other" offenders. The other category includes such offenses as underage possession or consumption of alcohol.

Figure 2

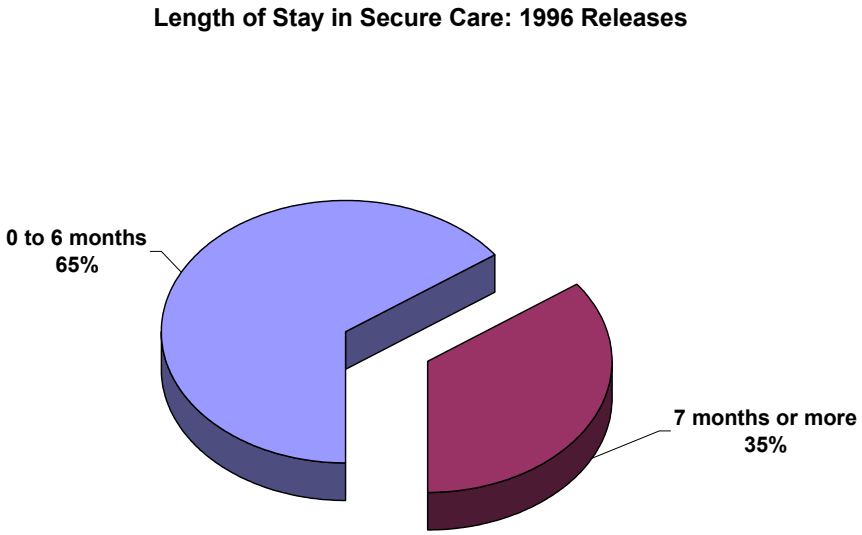


Figure 3

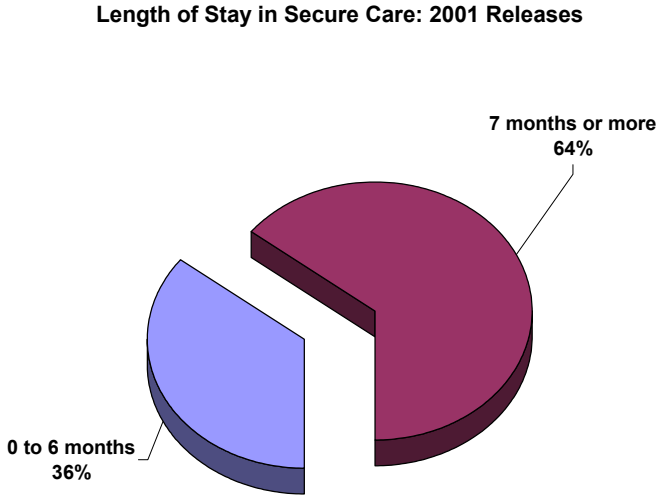


Table 2: ADJC Release Cohorts by Committing Offense Type

	1996	1997	1998	1999	2000	2001
Property Offenses	46.2%	52%	51.3%	47%	49.4%	47.9%
Crimes Against Persons	18.6%	19.6%	20.2%	20.3%	18.2%	18.6%
Drug Offenses	11.2%	15.2%	13.6%	16.1%	15.7%	16.9%
Public Order Offenses	7%	8.3%	9.3%	11.1%	10.7%	10.1%
Weapons Offenses	2.8%	1.9%	2.7%	2.8%	2.8%	2.6%
Other	1.5 %	2.1%	2.5%	2.8%	3.1%	3.4%
Missing	12.7%	0.9%	0.4%	0.0%	0.2%	0.6%
Total	100%	100%	100%	100%	100%	100%

Working with juveniles committed to the ADJC poses a formidable challenge because they are among the most demanding juveniles in Arizona. Many of the juveniles committed to ADJC have extensive delinquency histories. Among the six release cohorts studied, the percentage of releases with three or fewer adjudications has decreased, while the percentage with four or more adjudications has increased. Indeed, as can be seen in Figure 4, fully 72% of the 2001 releases had four or more adjudications, and only 28% had three or fewer. Working with such a difficult group of juveniles is both challenging and rewarding; without effective intervention efforts, many of these juvenile offenders would be facing a future in prison with its negative consequences.

Figure 4

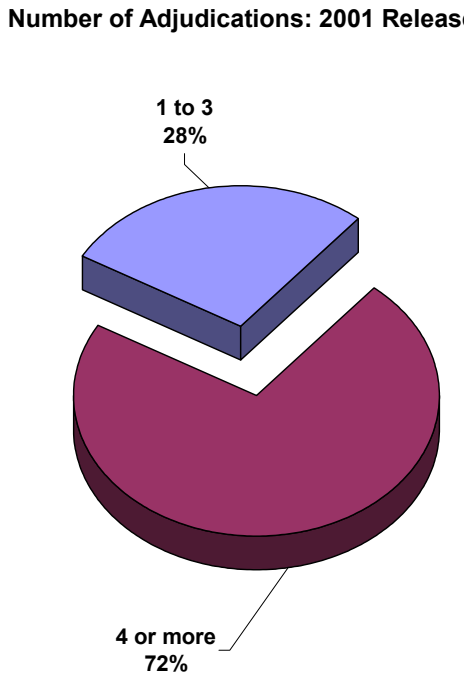
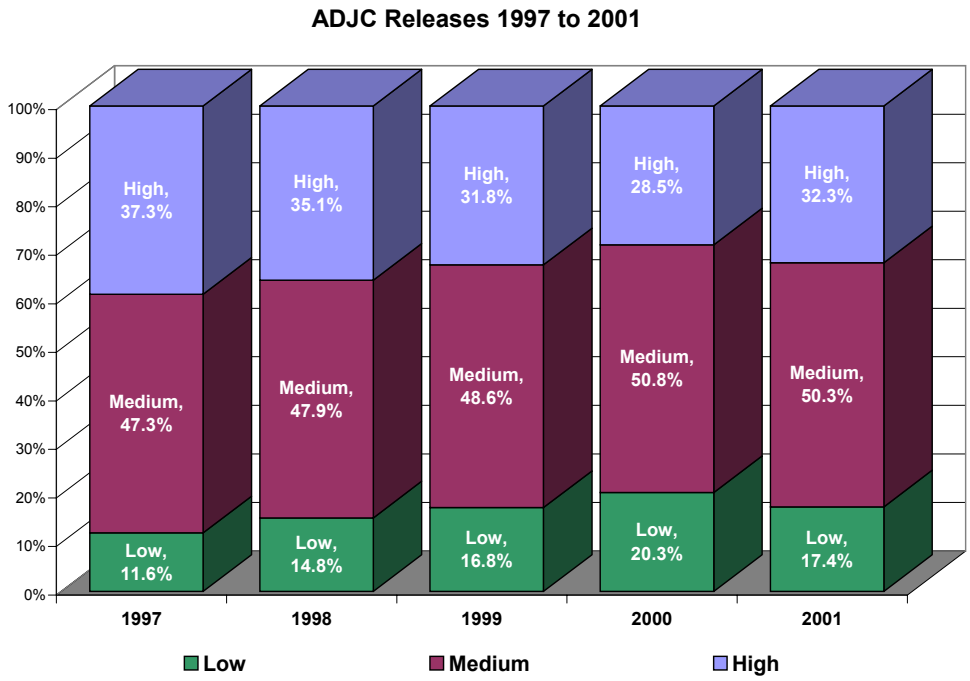


Figure 5



The ADJC risk instrument is used to assess the re-offense risk posed by juveniles committed to the department. The instrument includes such measures as history of assaultive offenses, gang affiliation, and substance abuse history. As shown in Figure 5, high-risk releases have tended to decrease since 1997, while the percentage of releases deemed medium- or low-risk has tended to increase. It is too soon to tell if the increase in the proportion of high risk releases between 2000 and 2001 represents the beginning of a trend in the opposite direction.

ADJC juveniles progress through a level system while in a secure care facility, and the highest level a juvenile is required to achieve depends upon his/her committing offense and risk score. Each of the five levels constitutes a progressive step with higher performance expectations. The levels are Orientation, Freshman, Sophomore, Junior, and Senior. Competency must be demonstrated at each level before the juvenile can move to the next higher level. Juveniles must demonstrate achievement not only in daily behavior but also in their respective treatment. As shown in Table 3, the vast majority (70%) of the 2001 releases were at the Junior or Senior level upon their release, and only 30% were at the Freshman or Sophomore level. There was a marked increase (17.9%) between 1999 and 2001 in the percentage of releases who were Juniors or Seniors. Indeed, the percentage of juveniles in the upper levels at release increased each year from 1999 to 2001[5]. This was a significant achievement for both the respective juveniles and ADJC staff as they worked together to teach the juveniles the necessary skills for them to remain crime-free upon release. This effort to raise the levels of juveniles released has been an important focus of staff effort to help reduce recidivism. The department expects

to see reduced delinquency/criminality among its releases as a direct result of this highly successful effort to raise the levels of ADJC releases.

Table 3: Level At Release For Those 17 Years Old or Younger Who Served A Minimum Of Six Months In A Secure Facility: By Year Of Release

Level	1999	2000	2001
Freshman or Sophomore	47.9%	36.6%	30%
Junior or Senior	52.1%	63.4%	70%
Total	100.% (n=448)	100.% (n=494)	100% (n=506)

B. 12-MONTH RECIDIVISM COMPARISON

Table 4: ADJC 12 Month Recidivism Rates by Year of Release

1996 (n=827)	1997 (n=1,095)	1998 (n=1,268)	1999 (n=1,040)	2000 (n= 945)	2001 (n= 889)
20.6% ADC: 5.4% Recommit:1% Parole Rev:14.3%	**24.3%** ADC: 6.2% Recommit:1.2% Parole Rev:16.9%	**26.6%** ADC: 5.4% Recommit: 0.8% Parole Rev:20.4%	**20.1%** ADC: 5.3% Recommit: 0.0% Parole Rev:14.7%	**27.5%** ADC: 5% Recommit: 0.0% Parole Rev:22.5%	**17.8%** ADC: 3.9% Recommit:0.5% Parole Rev:13.4%

This section analyzes one-year recidivism rates for the 6,064 juveniles released from ADJC secure care from 1996 through 2001. The analysis is organized by year of release, and the follow-up period of 12 months was measured from the date of each juvenile's release.

The 2001 release cohort posted a decrease (9.7%) in recidivism, which was attributed in large part to the establishment of the PA program (see Section 3) and the reduction in parole revocations (9.1%). In the past, the category of parole revocation included juveniles returned by an Arizona juvenile court for new offenses, juveniles returned by

ADJC Hearing Officers, and juveniles returned for technical violations of parole conditions. After the PA program was established, the category of parole revocations included only juveniles returned by an Arizona juvenile court for new offenses and a few returned by ADJC Hearing Officers. While technical violations of parole conditions can indicate serious problems, they do not constitute new delinquent offenses adjudicated by a juvenile court, and, for that reason, are not valid measures of recidivism. Indeed, technical violations of parole conditions may represent problems inherent in the juvenile's parole plan to the same degree that they may represent problems the juvenile is having in complying with her/his parole plan. The PA program was designed to intensively re-assess and resolve those problems.

The 2001 release cohort posted a 1.1% decrease in the percentage committed to adult prison within 12 months of release, the fourth consecutive year in which a decrease occurred in this important outcome. Although 12 months is a relatively short at-risk period, the declining trend is encouraging and may indicate real success in ADJC efforts to curb future criminality. Previous outcome reports have chronicled the high and growing percentage of ADJC releases who were sentenced to prison after first failing adult probation. R/D and NCCD staff, in cooperation with Dr. Nancy Rodriguez from the Arizona State University – West, are conducting a separate study to examine the various issues posed by this dilemma.

C. 24-MONTH RECIDIVISM COMPARISON

Table 5: ADJC 24 Month Recidivism Rates by Year of Release				
1996 (n=827)	**1997 (n=1,095)**	**1998 (n=1,268)**	**1999 (n=1,040)**	**2000 (n=945)**
34.8% ADC: 16.3% Recommit:1.3% Parole Rev:17.1%	**38.3%** ADC: 16.1% Recommit:1.7% Parole Rev:20.5%	**35.5%** ADC: 11.4% Recommit:1% Parole Rev:22.8%	**38.8%** ADC: 12% Recommit: 0% Parole Rev: 26.8%	**36%** ADC: 14.7% Recommit: 0.1% Parole Rev: 21.2%

This section analyzes the two-year recidivism rates for the 5,175 juveniles released from ADJC secure care from 1996 through 2000. The analysis is organized by year of release, and the follow-up period of 24 months was measured from the date of each juvenile's release.

The 2000 release cohort posted a 2.8% decrease in recidivism from the previous year, and it represented a continuation in the vacillating increase/decrease pattern evident in the 24-month recidivism rates from 1996 through 2000. The 5.6% decrease in parole revocations resulted largely from establishment of the PA program. Table 5 displays a two-consecutive-year increase in the percentage of releases sentenced to ADC; however, the 2000 recidivism rate to adult prison is still more than one full percentage point below the rates posted in both 1996 and 1997.

D. 36-MONTH RECIDIVISM COMPARISON

Table 6: ADJC 36 Month Recidivism Rates by Year of Release			
1996 (n=827)	**1997 (n=1,095)**	**1998 (n=1,268)**	**1999 (n=1,040)**
41.7% ADC: 23.5% Recommit: 1.3% Parole Rev: 16.9%	**42.5%** ADC: 22.3% Recommit: 1.6% Parole Rev: 18.7%	**44.6%** ADC:20.7% Recommit: 1.4% Parole Rev: 22.5%	**43.9%** ADC:19.8% Recommit: 0.4% Parole Rev: 23.7%

This section analyzes the three-year recidivism rates for the 4,230 juveniles released from ADJC secure care from 1996 through 1999. The analysis is organized by year of release, and the follow-up period of 36 months was measured from the date of each juvenile's release.

The 1999 release cohort posted a 0.7% decrease in recidivism from the previous year, and it represents the first decrease in the 36-month recidivism rates since ADJC first began tracking the recidivism rates of its releases. Also, decreases (0.9% and 1%, respectively) were posted in the percentage of releases sentenced to ADC or recommitted to ADJC. This represents the third consecutive decline in the percentage of ADJC releases sentenced to prison within three years. As noted previously, the continued reduction in ADJC releases sentenced to an Arizona prison is a very encouraging outcome and a testimony to the dedicated efforts of ADJC staff. Meanwhile, a 1.2% increase was noted in the percentage of releases returning to a secure facility because of a parole revocation. The increase in parole revocations may have been higher without the establishment of the PA program.

E. COMPOSITE RECIDIVISM ANALYSIS

Table 7: ADJC COMPOSITE RECIDIVISM

	12 Months (n=6,064)	**24 Months (n=4,230)**	**36 Months (n=3,190)**
Recidivism	ADC: 5.2% Recommit: 0.6% Parole Rev: n/a	ADC: 14.1% Recommit: 0.8% Parole Rev: n/a	ADC: 21.6% Recommit: 1.2% Parole Rev: n/a

On average, 5.2% of ADJC releases were sentenced to an Arizona prison within one year of their release, 14.1% were sentenced to prison within two years, and 21.6% were sentenced to prison within three years. Less than one percent of releases were recommitted to ADJC within one or two years, and only 1.2% were recommitted within three years. Establishment of the PA program resulted in a redefinition of the category of parole revocation. Unfortunately, the manner in which the different types of parole revocations were counted within ADJC was not consistent across all of the years we have studied; therefore, it is impossible (1) to recalculate previous revocation figures using the new definition, and (2) to calculate total recidivism and parole revocation composite rates across the seven release cohorts.

Many ADJC releases have cycled through the Arizona juvenile justice system and have failed less restrictive consequences, such as probation or intensive probation. Given their past, it is likely that future juvenile/criminal sanctions for ADJC releases will include some form of secure custody. Indeed, fully 72% of the 2001 releases had four or more juvenile court adjudications—many of them for felony-level offenses. Thus, return to custody is the appropriate recidivism metric for this cohort. With an average release age of 16, 36 months covers many juvenile offenders through ages 17, 18, and 19. The high percentage (78.4%) of juveniles not sentenced to prison after three years presents a significant measure of success for ADJC because it includes offenders who are, most likely, in their highest offending years. With an average length of stay of 9 months and the difficult—sometimes criminogenic—home environments characteristic of many ADJC releases, it is only through the hard-work of ADJC staff that so many of our releases remain crime-free in the community. Tracking ADJC releases for 36 months

responds to the original budgetary mandate for this project, which required that "short-term results (up to one year past release from secure care) and long-term results (at least two years past release) should be studied." The Washington State Institute of Public Policy addressed the issue of the appropriate follow-up period required to measure recidivism accurately. It stated that an accurate measure should capture 75% to 80% of delinquency/criminality, and it determined that "…at least 30 months must pass from release into the community to fully describe juvenile recidivism…(and)…at least 36 months must pass from release into the community to fully describe adult recidivism[6]." No research has been published on the expected duration of treatment effects associated with the various specialty and general population programs in use at ADJC. Nevertheless, it is reasonable to expect treatment benefits to dissipate as the ADJC releases are exposed to a variety of criminogenic influences over a period of many years. Linking ADJC efforts to delinquent/criminal actions which occur more than 36 months after a juvenile is released is unrealistic relative to the expected duration of ADJC treatment programs. ADJC success rates are significant in light of the backgrounds of many of the juveniles released from ADJC. Working with such a difficult group of juveniles is both challenging and important; without effective intervention efforts, many of them would be facing a costly future of life in prison. It has been estimated (Cohen, 1998) that the monetary value of saving one high-risk youth ranges from $1.7 million to $2.3 million[7].

2. ADJC SPECIFIC RECIDIVISM RATES FOR 2001 RELEASE COHORT

A. By Secure School

This section deals with the impact individual ADJC institutions have on recidivism. Table 8 includes all juveniles released from the various ADJC facilities in 2001. As you can see, Encanto had the highest percentage (23.4%) of releases that returned to custody as either parole violators or recommitments. The Encanto facility is the department's facility for juveniles with serious mental health issues and the Encanto program was reviewed in detail in the *Sixth Annual Outcome Report*. Juveniles assigned to Encanto have serious mental health problems and face daunting challenges when they are returned to the community. Catalina Mountain, meanwhile, had the lowest percentage (11.5%) of releases that returned to custody as either parole violators or recommitments. Catalina Mountain staff should celebrate their achievement in reducing recidivism, however, from a strict social science standpoint, it is unclear what caused this success. Research has shown that an important determinant of recidivism is *age at release*. Indeed, older releases recidivate less often. The next section of this report (2b) presents the results of an exploratory effort to remove the confounding effects associated with the inclusion of older releases, and allows the department to continue its efforts, which were started two years ago, to make recidivism a relevant outcome for staff working in ADJC. As shown in Section 2b, the removal of older releases from the analysis, produces very different results for Catalina Mountain and the other secure schools as well.

Table 8 also shows that Adobe Mountain had the highest percentage (6.9%) and Eagle Point the lowest percentage (1.5%) of release that were sentenced to an Arizona prison

within one year of release. The average age of releases for the respective institutions may be an important determinant of the observed results. Indeed, Adobe Mountain may have had a relatively high percentage of releases sentenced to an Arizona prison, in large part, because many of their releases were older which meant that their future offenses made them eligible for prosecution in an Arizona Superior Court and if convicted, a sentence to an Arizona prison.

Table 8: Recidivism by Type and Institution

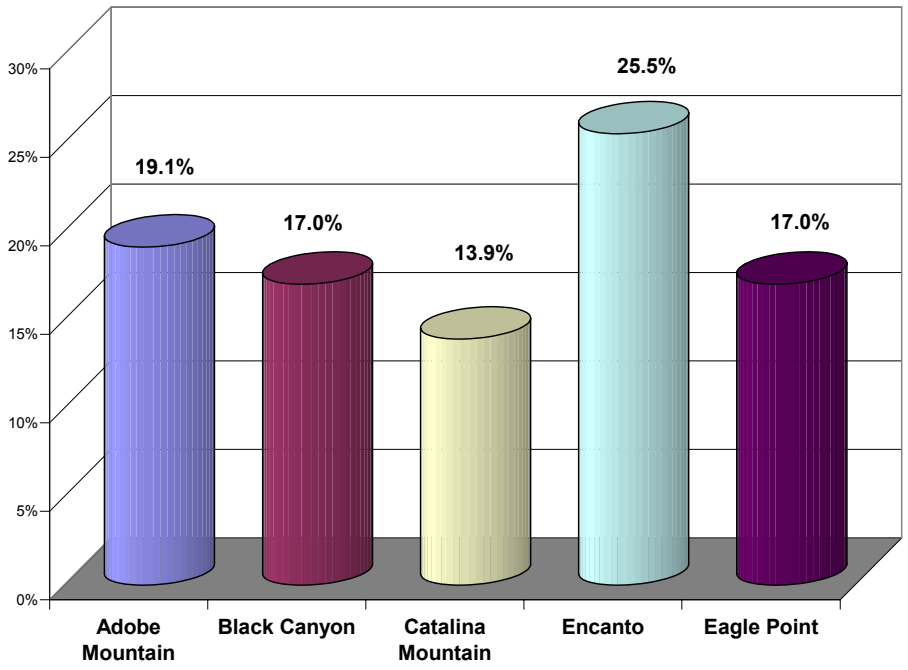
	Adobe Mountain	Black Canyon	Catalina Mountain	Encanto	Eagle Point
ADJC	12.2%	14.9%	11.5%	23.4%	15.5%
ADC	6.9%	2.1%	2.5%	2.1%	1.5%
SUCCESS	80.9%	83.0%	86.1%	74.5%	83.0%
TOTAL	100%	100%	100%	100%	100%

Figure 6 displays the overall recidivism percentages by respective ADJC institution. Encanto had the highest overall percentage of recidivism (25.5%) and Catalina Mountain had the lowest (13.9%). These results may resonate with people who believe that Catalina Mountain is the best ADJC facility and Encanto releases face the toughest challenges when released. While these people may be right, this argument should be treated as these results may be, in large part, a function of the characteristics of the juvenile they released. In other words, Catalina may have released less serious delinquents, therefore, it is less likely that they would recidivate. Section 2b will introduce an exploratory effort to remove both the confounding effects of age and produce a more scientifically accurate

measure of the comparative effectiveness of each ADJC institution. This measure involves a computation of expected recidivism rates which are a direct result of the unique characteristics of the releases from each ADJC secure school.

Figure 6

Recidivism by Institution



B. An Enquiry into Institution Effectiveness

One interesting question intimately connected to recidivism is the extent of institution effectiveness. One approach toward measuring institutional effectiveness is to compute the average expected (estimated) values of recidivism for each of the five ADJC institutions using logistic regression, and to compare them against the actual values of

recidivism. This section presents the results of an exploratory effort to calculate a statistically valid measure of institutional effectiveness. Similar efforts to calculate program effectiveness have been performed by the Florida Department of Juvenile Justice[8].

The exploratory statistical analysis of recidivism rates reviewed in this section provide ADJC managers with outcome results which utilize prior research findings and empirical trends which exist in ADJC data. The calculation of average expected values was based on the factors that were found to have a statistically significant influence on recidivism. The factors included risk score and age at release for males; and risk score, age at release, and emotional stability for females. Nine other factors were reviewed and found not to have a statistically significant relationship with recidivism. Those nine factors were:

1. Length of stay;
2. Gender;
3. Race/ethnicity;
4. Substance abuse;
5. Property offense history;
6. Intellectual or educational deficiencies;
7. Delinquent ties;
8. Gang affiliation; and
9. Family substance or sexual abuse.

Lacking a significant statistical relationship with recidivism, it is doubtful that these nine factors can account for the observed differences between expected and actual recidivism rates. To better facilitate the comparison, we calculated confidence intervals around the expected values to demarcate the reasonable range of values within which the true recidivism rate was expected to fall. If the actual rate of recidivism was observed to be above the maximum range of expected values, then that might indicate relative

ineffectiveness. If the actual rate of recidivism fell below the minimum expected range of recidivism, then that might indicate relative *effectiveness*.

METHODOLOGY NOTE

The raising of a methodological issue of some importance is in order here. The present exercise ideally should be conducted within the framework of what statisticians designate as "Multi-Level" analysis. The problem at hand presents two levels. The juveniles within a school constitutes the "juvenile level" and, at this level, the analysis would account for factors responsible for variations in the outcomes of individual juveniles. The juvenile level of analysis has to be contrasted with the "institutional level" where recidivism is accounted for by factors that are valid only at the institutional level. The individual outcomes of juveniles may be attributable, for example, to their differences in risk scores, while the institutional level differences could be accounted for by factors specific to institutions, such as different turnover rates of Youth Correctional Officers (YCOs) or different average educational levels of staff at different institutions. The logistic regression analysis that is reported here captures only juvenile-level effects and excludes annual and institutional-level effects. The R/D section recently obtained a computer software package called MLwiN from the Center for Multilevel Modeling in London, England, that will resolve this issue and permit future analyses to account for factors at the institutional and annual level. Therefore, caution is urged in interpreting the results and in arriving at policies to improve the effectiveness of institutions based on the statistical analysis completed to date.

In order to capture accurately the impact of age at release on recidivism, we included in our analysis only juveniles who were less than 17 years of age when released during 2001[9].

The total number of juveniles included in the analysis was 397, of which 107 recidivated within the one-year follow-up period. A breakdown of males and females in the sample accompanied by their recidivism status is displayed in Table 9.

Table 9**:** Recidivism Status of the Juveniles in the Sample

	Recidivated	**Did not Recidivate**	**Total**
Male	84.1%	83.8%	83.9%
Female	15.9%	16.2%	16.1%
Total	100% (n=107)	100% (n=290)	100% (n=397)

ESTIMATION NOTE

The estimated coefficients of the variables used to calculate the expected values for each of the institutions are given below.

VARIABLE	ESTIMATED COEFFICIENT	T-RATIO
RISKSC	0.22939	3.7973
AGEATREL	-0.20729	-1.4380
EMOTSTA	0.60637	1.4974
CONSTANT	.2967	0.58327

LIKELIHOOD RATIO TEST = 18.9644 WITH 3 D.F.

The mnemonic names stand for the following variables.

RISKSC: Risk Score
AGEATREL: Age at Release
EMOTSTA: Emotionally Unstable and girl=1, otherwise=0.

The likelihood ratio test suggests that at least one of the explanatory variables is statistically significant. As the t-test shows, all of the coefficients are significant, at most at 8%. Also, all of the coefficients have the expected sign. Of interest is the observation that emotional instability as a determinant of recidivism was statistically insignificant for males (not shown here) but statistically significant for females.

Column 4 of Table 10 provides the actual recidivism rates after juveniles 17 years of age and older were excluded. Please note that the ranking of actual recidivism rates of institutions has changed when compared to the situation when juveniles 17 years and above were included (see Figure 6 and Table 8). In Figure 6 and Table 8, Encanto had the highest recidivism rates and Catalina the lowest, while in Table 10, Catalina had the highest and Black Canyon the lowest. The deletion of juveniles 17 years of age is the reason for the difference. This exclusion caused the Encanto's recidivism rate to increase marginally (1.8%) and the rate of all others to increase substantially. Among the others, the largest increase was evidenced by Catalina (16.7%) and the lowest by Black Canyon (6.2%).

Column 5 of Table 10 provides an estimate of the effectiveness of the institutions. The estimate of effectiveness is calculated by subtracting the actual recidivism rate from the estimated recidivism rate[10].

Table 10: 2001 Release Cohort and Estimate of Effectiveness: by Institution				
#1	**#2**	**#3**	**#4**	**#5**
Institution	**Number of Juveniles**	**95% Confidence interval of expected recidivism rates (%)**	**Actual recidivism Rates**	**Estimate of effectiveness**
Catalina	49	22.1, 28.2	31%	-2.8%
Eagle Point	115	25, 28.3	30%	-1.7%
Encanto	33	24.8, 32.5	27%	0
Adobe	144	25, 27.9	24%	1%
Black Canyon	56	33.9, 39.2	23%	10.9%

According to our exploratory calculations—albeit imperfect for the technical reason noted above—Black Canyon was the most effective ADJC institution in curbing recidivism. In fact, they had an actual recidivism rate (for releases 16 and younger) that was 10.9% below what would be expected based upon the statistical analysis of empirical trends in ADJC recidivism. In addition, Adobe Mountain was found to be relatively effective insofar as their actual recidivism rate was 1% less than was predicted. Encanto was found to have an actual recidivism rate equal to their predicted rate. Continuing with this exploratory approach, Catalina Mountain had the lowest effectiveness rating. Indeed, they had an actual recidivism rate (for releases 16 and younger) that was 2.8% greater than what would be expected based upon the statistical analysis of empirical trends in ADJC recidivism. Likewise, Eagle Point was found to have an actual recidivism rate 1.7% greater than what was predicted.

It is important to keep in mind that the range in differences is relatively small. In fact, the difference between Catalina's actual and expected recidivism rate was only 2.8%. This finding means that Catalina's actual recidivism rates were very close to what would be expected, taking into account there may be other unmeasured factors that account for the

observed differences and that the analysis only included juveniles who were less than 17 years old. Nevertheless, small differences—such as 2.8%—are meaningful when one takes into account the personal and social costs associated with youthful offenders who become career criminals. They create additional crime victims, they cause pain and suffering for their families, and they contribute to the waste in personal and social capital that is associated with a lifetime spent cycling in and out of Arizona's prison system.

C. By Parole Office

Table 11 below classifies recidivism rates according to the Parole Office to which the juveniles were assigned. Overall, North Parole had the highest and Rural Parole the lowest recidivism rates. North Parole had the highest rate and South Parole the lowest rate of recidivism to ADJC, while South Parole had the highest rate and Tucson the lowest rate of recidivism to ADC[11]. Time constraints prevented us from applying the statistical measure of effectiveness described in the previous section to Parole Offices.

Table 11: Recidivism by Parole Offices

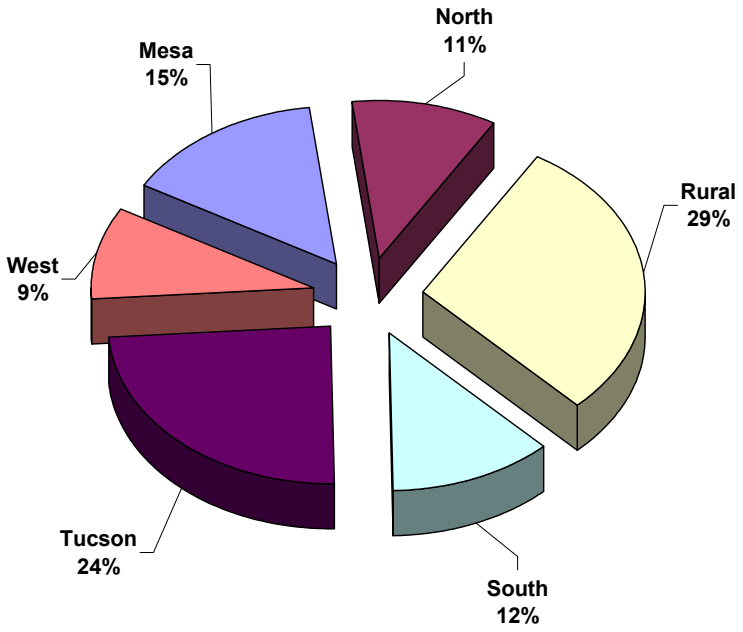
	Mesa	North	Rural	South	Tucson	West
ADJC	14.7%	20.0%	14.3%	10.5%	14.8%	15.5%
ADC	5.2%	6.2%	2.6%	9.5%	2.2%	5.6%
Success	80.2%	73.8%	83.2%	80.0%	83.0%	78.9%
Total	100% (n=116)	100% (n=65)	100% (n=273)	100% (n=95)	100% (n=223)	100% (n=71)

Figure 7 displays the recidivism by parole office as percentage of all recidivists. The West Parole Office had the lowest share of recidivism, while the Rural Parole Office had the highest. A comparison of the *percentage of releases* by Parole Office to the

percentage of recidivists by Parole Office shows that the Rural (3.4%) and Tucson (2.5%) offices had more recidivists than expected, and the North (3%) and Mesa (1.5%) offices had fewer recidivists than expected, using this same method, the West and South offices were found to have had an amount of recidivists comparable to what was expected.

Figure 7

Share of Recidivism by Parole Office



D. Frequency of Recidivism and its Determinants

The rate at which juveniles return to custody and its underlying causal factors provide yet another dimension to the vexing problem of recidivism. Table 12 below displays the monthly rate of recidivism for the 2001 releases using the Kaplan-Meier survivorship function[12].

Table 12: 2001 Release Cohort and Monthly Rate of Recidivism				
#1	**#2**	**#3**	**#4**	**#5**
Months After Release	**Frequency**	**Cumulative Frequency**	**Per Cent**	**Per Cent Change**
1	5	5	.06	
2	18	23	2.6	2.54
3	14	37	4.2	1.6
4	14	51	5.8	1.6
5	22	73	8.2	2.4
6	12	85	9.7	1.5
7	13	98	11.2	1.5
8	11	109	12.4	1.2
9	12	121	13.8	1.4
10	15	136	15.5	1.7
11	13	149	17.0	1.5
12	5	154	17.5	0.5

Of the juveniles released during 2001, 154 recidivated during the period in question. Column 1, together with column 3, can be used to determine the number of juveniles who recidivated up to and including a specified month. For instance, the number of juveniles who recidivated up to and including the fifth month was 73. The largest absolute increase was witnessed during the fifth month (22 juveniles) and constituted an increase of 2.4% from the previous month.

ESTIMATION NOTE

We employed Cox's proportional hazard ratio of Survival Analysis to relate variation in monthly recidivism rates to its determinants.

VARIALBES	EXP(ESTIMATED COEFFICIENTS)	95% CONFIDENCE INTERVAL FOR EXP ESTIMATED COEFFICIENTS)
RISKSC	1.175	1.088, 1.269
AGEATREL	0.650	0.576, 0.734

LIKELIHOOD RATIO TEST = 62.417 WITH 2 D.F.

The mnemonic names stand for the following variables.
RISKSC: Risk Score
AGEATREL: Age at Release

The likelihood ratio tests show that at least one of the coefficients is significant. In fact, the exponentiated coefficients for risk score and age at release fall between the confidence intervals, suggesting that both of

them are statistically significant at the 5% level. The coefficients for risk score suggest that a point increase in the risk score would cause the recidivism rate to increase by 17.4% per month for the 12-month period under consideration. In other words, higher risk scores were associated with a higher rate of recidivism per month. If the risk score increased from 3 to 4, for example, the rate at which juveniles recidivated per month would be 17.4% more for juveniles with a risk score of 4 than for juveniles with a risk score of 3. With respect to the variable of age at release, it was noted that the higher the age, the lower the monthly rate of recidivism. To be precise, if the age at release increased by one year, the monthly recidivism rate was reduced by 35%. If 100 juveniles aged 13 recidivated per month, for example, only 65 juveniles aged 14 would be expected to recidivate during the same time period.

ESTIMATION NOTE

The results of the proportional hazard estimating equation are presented below.

VARIALBES	EXP(ESTIMATED COEFFICIENTS)	95% CONFIDENCE INTERVAL FOR EXP ESTIMATED COEFFICIENTS)
RISKSC	1.509	1.190, 1.914
AGEATREL	0.656	0.581, 0.740

LIKELIHOOD RATIO TEST = 56.913 WITH 2 D.F.

The mnemonic names stand for the following variables.
RISKLEV: Risk Level.
AGEATREL: Age at Release

Another variant of the above analysis was undertaken with risk level as opposed to risk score as one of the determinants. The risk levels were calculated as follows.

Table 13: Risk Score to Risk Level

Risk Score	Risk Level
-3 - 1	Low
2 - 4	Medium
5 -10	High

The likelihood ratio is highly statistically significant. Both of the coefficients are significant at the 5% level, and the coefficient for the age at release has roughly the same value as in the earlier equation. The coefficient for risk level bears some explanation. The coefficient suggests that as risk level increased from low to medium to high, a corresponding increase occurred in the monthly recidivism rate of 50%. For example, if 100 juveniles with a low risk level recidivated per month, then 150 juveniles would recidivate per month with a medium risk level.

The above analysis suggests that monthly recidivism rates are fairly stable, with the fifth month representing a particularly risky time. Monthly recidivism rates were found to depend on two factors: age at release and risk score. When ADJC parole officers are challenged to decide how to allocate their time and resources between a youth who has a high risk score and a youth who has a low risk score, our analysis suggests that they would be well advised to devote their attention to the high-risk youth, since their attention could have tangible consequences on the monthly recidivism rate. Our analysis also suggests that, given two juveniles with the same risk score, ADJC parole officers should direct their attention first toward the younger parolee and then toward the older parolee, since paying close attention to the younger parolee is likely to affect the monthly recidivism rate. The result of the above analysis is that juveniles with higher risk scores and lower age deserve more care and attention, which, in turn, could produce a perceptible impact on ADJC recidivism rates.

3. SPECIAL TOPICS

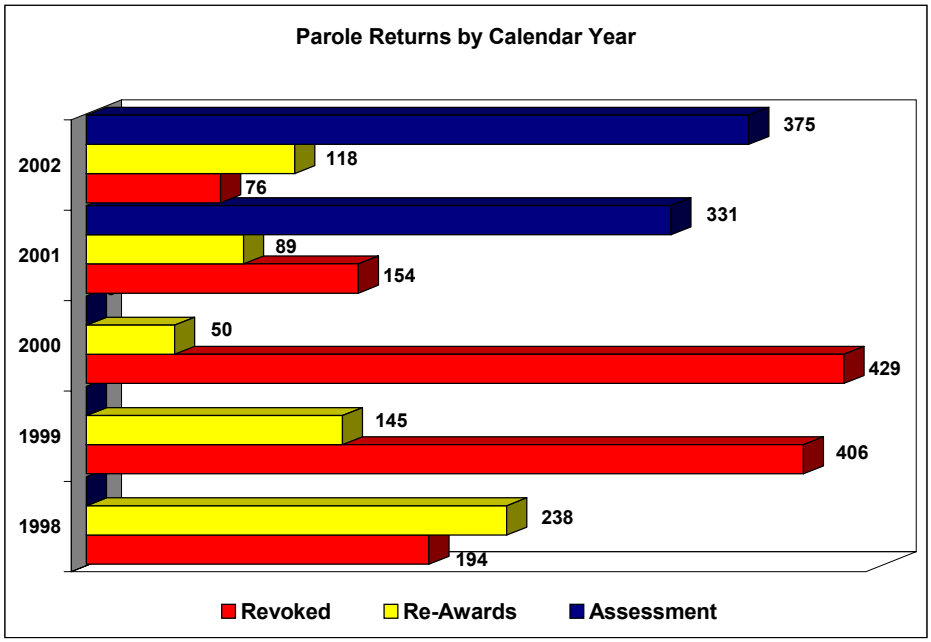
A. Parole Assessment

Juveniles committed to ADJC are among the most troubled in Arizona, and they face formidable challenges when they are released to parole supervision from a secure facility. The ADJC PA program is for juveniles on parole who are having trouble complying with their parole conditions. The Sunrise Parole Violator Center (SPVC), located adjacent to the Eagle Point School in Buckeye, Arizona, opened in February 2001 and houses males placed on PA. The Independence Parole Violator Center (IPVC), located within the Black Canyon School in Phoenix, opened in July 2001 and houses females placed on PA. Director Gaspar and the Leadership Team selected the PA program as a special topic for the *Seventh Annual Outcome Report* because it was the single most important program change that occurred during 2001. Juveniles placed in the PA program remain on community status and are not assigned to one of ADJC's secure facilities. As a result, juveniles placed in the PA program are technically categorized as in *parole reinforcement* and are excluded from the manner in which ADJC counts recidivism. The purpose of this section is to provide the reader with a brief description of the PA program.

In response to a request from several Arizona juvenile court judges to hold juvenile delinquents accountable for their actions, ADJC has been monitoring juveniles on parole more closely. In fact, in December 1999, the Department established procedure 4301.04, *Parole Violator Matrix*, which provided a structured decision-making matrix for the review of parole violators.

As can be seen from Figure 8, establishment of the parole assessment program in 2001 changed the composition of parole returns. Indeed, the number of revocations decreased dramatically as the number of parole assessments increased. Juvenile offenders on parole supervision are sometimes returned to custody as a result of an action taken by an Arizona juvenile court, and they are called re-awards. The number of juveniles re-awarded to the ADJC for new charges declined in 2000 and increased in 2001 and 2002. The increases were, in part, a result of ADJC staff's more accurately recording re-awards. Indeed, the record-keeping enhancements were driven by ADJC efforts to ensure that all juveniles re-awarded to ADJC were, in fact, placed in secure facilities.

Figure 8



When a juvenile has a pending revocation/suspension hearing, one of three results can occur: parole reinstatement, parole assessment (reinforcement), or parole revocation. Parole revocation results in a juvenile returning to a secure facility[13].

During 2002, 48.4% of the juveniles who had pending revocation/suspension hearings were placed on parole assessment, 24.9% were returned to parole, 25.6% were placed on parole revocation, and 1.1% were discharged.

Limited national data exists on recent trends in juvenile parole violations. However, a considerable amount of academic research has been devoted to problems associated with adult inmate reentry and parole revocation. A recent General Accounting Office study (General Accounting Office, 2001) characterized prison releases as being akin to a revolving door and:

> …the number of offenders reincarcerated for violating parole or other release conditions increased more than sevenfold from 28,817 in 1980 to 209,782 in 1998. Further, such reincarcerations represent an increasing proportion of all prison admissions – for instance reincarceration of violators of parole or other release conditions represented 17 percent of all prison admissions in 1980 but increased to 35 percent in 1998. (General Accounting Office, 2001, 3).

Joan Petersilia, Ph.D., of the University of California-Irvine recently completed a study of parole and prisoner reentry. Her research found the following:

> It appears from the available evidence that persons being released from prison today are doing less well than their counterparts released a decade ago in successfully reintergrating into their communities. More of them are being rearrested; these arrests are occurring more quickly; and as a group, ex-convicts are accounting for a growing share of all serious crimes experienced in the United States. (Petersilia, 2003, 144).

In large part, the ADJC PA program was designed to carefully re-assess the juvenile and his/her parole plan and to help promote their success. Many Correctional Administrators feel that it is better to take immediate action when parolees are committing technical violations than to permit them to escalate into more serious violations. They believe it is beneficial to remove offenders from the community in order to get their attention and, in turn, help them respond to treatment. Indeed, failure to react to technical violations may undermine the parole conditions and encourage juveniles to engage in more antisocial behaviors. Moreover, a short time spent out of the community may enable the offender to abstain from drugs/alcohol or avoid interaction with delinquent peers, such that treatment can be beneficial. Most importantly, the short time spent in the PA program permits staff to carefully review and revise the established parole plan for each juvenile.

A frequently heard justification for establishing a separate return-to-custody facility is that Correctional Administrators have found that introducing a large number of parole violators into the general population of new offenders is disruptive, because the parole violators tend to undermine staff efforts to rehabilitate the new commitments.

A juvenile is sent to the ADJC PA program when s/he has allegedly violated his/her conditions of parole. A hearing is conducted within 10 business days of the juvenile's arrival, and an ADJC Hearing Officer decides whether the allegation is "Proven" and the appropriate placement for the juvenile. Approximately two-thirds (65.6%) of the juveniles placed on PA during 2002 were placed because of non-delinquent offenses, for instance not reporting to their parole officers, absconding from placement, not attending school, or having "dirty" urinalysis (UA) tests (See Table 14). The remaining placements

resulted from the Hearing Officer's finding a "preponderance of evidence" indicating that the alleged offense had occurred. Factors affecting the Hearing Officer's decision included the following:

1. Background in criminal offense – Does the juvenile have a history of any crimes against persons?
2. Length of time on parole – While the juvenile was on parole, what programs/services did s/he receive?
3. Does the juvenile show signs of being amenable to treatment?
4. Does the juvenile have any family support?
5. How many revocations has the juvenile been through, and what happened in each revocation?
6. Has the juvenile ever absconded parole?
7. Is the juvenile a substance abuser?

At times, an Arizona Juvenile Court will conduct formal proceedings relative to the same offense, resulting in the juvenile being adjudicated as delinquent and his/her parole being revoked. When that occurs, the juvenile is removed from the PA program and placed in an ADJC secure facility.

Table 14: Admissions[14] to Parole Assessment by Committing Offense Type

	2001	**2002**
Non Delinquent/Technical	67.2%	65.6%
Property Offenses	11.6%	11.8%
Crimes Against Persons	6.6**%**	9.1%
Drug Offenses	6.4%	7.2%
Public Order	5.8%	4.1%
Weapons Offenses	1.2%	1.1%
Other Offenses	1.2%	1.1%
TOTAL	100%	100%

When a juvenile is placed in the PA program, s/he is subjected to a reception and assessment process to determine appropriate programming and case planning. A Multi-Disciplinary Team (MDT) is established consisting of the juvenile, the PA Case Manager, the Parole Officer, an education staff member, the Family Service Coordinator, a psychology staff member, and the juvenile's parents or guardians. The MDT is responsible for developing a new parole plan for each juvenile with a minimum of three new goals. The juvenile's new parole plan will consist of new goals, along with modifications (if necessary) to existing goals. The revised plan is intended to increase the likelihood that the juvenile can succeed. "Tony," for example, was released from AMS on 3/20/01. His conditions of release were participation in GED studies, vocational rehabilitation, individual family counseling, Treatment Assessment Screening Center (TASC) random UA's, and eight hours of community service, as well as compliance with all other standard conditions of supervision. Subsequently, Tony was assigned to SPVC for violating two conditions of supervision: He failed to stay in regular contact with his Parole Officer, and he failed to follow the rules of the home. While at SPVC, the MDT was able to determine that "Tony" was having trouble living with his grandparents and experiencing impulsive behaviors. "Tony" was reassigned to a residential treatment facility so that he could work with the staff to address his aggressive behavior and temper outbursts.

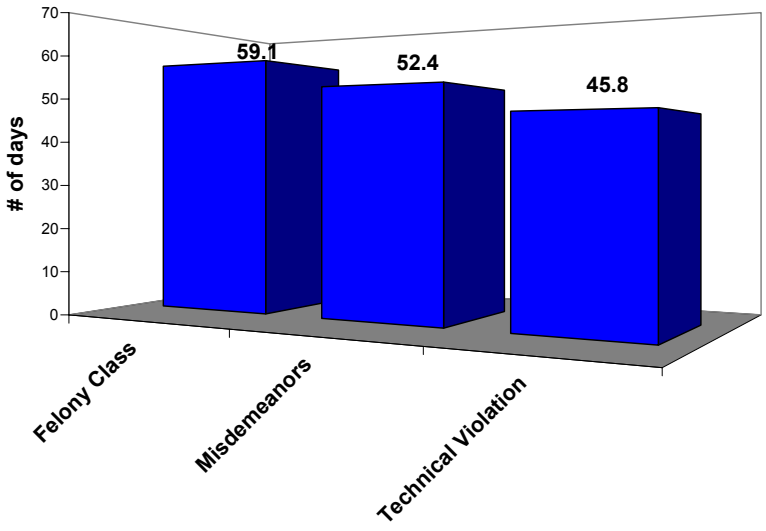
Among the juveniles released from ADJC secure facilities in 2001, 115 (13%) were assigned to the PA program within 12 months of their release. A comparison of the characteristics of juveniles placed in a PA program versus those revoked shows more similarities than differences. The two key differences between the groups involved

offense type and number of adjudications. First, 72.2% of the juveniles assigned to the PA program were placed there for absconding a placement or for a nondelinquent offense, whereas only 6.7% of the juveniles who were revoked had these offenses. Second, juveniles in the PA program had fewer adjudications than those revoked. In fact, more than half (56.5%) of the juveniles placed in the PA program had fewer than five adjudications, while two thirds of the juveniles who had their parole revoked had more than five adjudications.

Table 15: PAROLE ASSESSMENT USAGE BY PAROLE OFFICE	
Rural Counties	33.9%
Tucson Parole	19.1%
Mesa Parole	13.9%
South Parole	13.9%
North Parole	12.2%
West Parole	7.0%

As shown in Table 15, almost half (47%) of the juveniles placed in the PA program came from a metropolitan Phoenix Parole Office (Mesa, South, North, or West). The Rural Arizona Parole Offices accounted for one-third (33.9%), and Tucson Parole accounted for approximately one-fifth (19.1%).

Figure 9: LENGTH OF STAY AT SPVC BY OFFENSE TYPE



On average, the juveniles placed in the ADJC PA program spent 48.5 days there. Approximately 19.% of the juveniles assigned to the PA program remained there for fewer than 28 days, 56.7% remained for 29 to 60 days, and 24.3% remained for more than 60 days. Almost two-thirds (64.3%) of those who spent more than 60 days in the PA program did so because they were waiting for placement. As shown in Figure 9, juveniles assigned to the PA program for technical violations spent an average of 45.8 days there, while those assigned to the PA program for a misdemeanor- or felony-level offense spent a longer period of time there. In comparison, juvenile commitments released from secure facilities in 2001 spent an average of 272.3 days in ADJC facilities, while juveniles who had their parole revoked spent 201.5 days.

Upon release, it is the responsibility of the juvenile and his/her Parole Officer to work together to follow the established transition plan. The revised plan is intended to increase

the likelihood that the juvenile can succeed. The following youth case summaries illustrate the many challenges they face.

Case Summary #1

The youth was originally committed to ADJC in February of 2000. He spent 13 months in secure care at the Encanto mental health facility and was paroled in March of 2001. The youth, at age 14, already had a delinquency history of assault, arson, criminal trespass, disorderly conduct, criminal damage, domestic violence, escape, and cruelty to animals. He was diagnosed with many mental health problems, including depression, severe Attention Deficit Hyperactivity Disorder (ADHD), Oppositional Deficit Disorder (ODD), Schizoaffective Disorder, Bipolar Disorder, and Mood Disorder. These conditions directly affected his choices and decisions while on parole. He has been placed in many programs while on parole, including Open Inn Convent House, Southwest Keys, Providence, M.A.T.C.H., Sonora Behavioral Hospital, and others. While moderately successful in these programs, because of his mental health issues, he was unable to succeed consistently. After he was placed on parole, he had ongoing problems complying with medication orders, which caused his anger and impulse control to deteriorate. While this youth encountered various problems with his programming, he did not return to secure care for a hearing for seven months. At his hearing, he was assigned to the SPVC to obtain help with the problems he was having in complying with his parole conditions. He returned to the SPVC three times before he turned 18 in March of 2003 and was discharged from ADJC. Unfortunately, this youth has numerous mental health problems that will continue to affect many aspects of his life. His parole officer made arrangements for him to enroll in a program that will help him with medication and life skills as an adult.

Case Summary #2

The youth was committed to ADJC in July, 2001 from Mohave County for probation violation stemming from his original offense of criminal damage, a class 6 felony. He was released on parole status in January of 2002. In May of the same year, he was assigned to the SPVC after parole violations of absconding and underage alcohol consumption. While at SPVC, he complied with diagnostic conditions, including the clinical services assessment; youth transition questionnaire, school-to-career transition packet, personal goals and independent living plan, diagnostic reading, NCE diagnostic math, and the assessment summary sheet. This youth has faced many family challenges in his life, including parents with substance abuse issues, prior abuse, and placement in foster care. After he was assigned to the SPVC, his father and stepmother, who lived in Oregon, tried to turn their lives around and wanted the youth to return to their care. He was placed on interstate parole in order to live with them. Within two months of arriving in Oregon, the youth had started his GED program and began working part time. The youth completed his GED criteria and enrolled in a local community college. His career goal is to eventually become a firefighter, and he is working toward that goal. As a result of his hard work and diligence in complying with his terms of conditional liberty, as well

as the recommendation of an Oregon Parole Officer, he was granted an absolute discharge from ADJC in March of 2003, the ultimate level of success for our youth.

The ADJC Parole assessment Program has been in operation for only two years, and the program faces some serious challenges The program is located approximately 50 miles from a major urban center, which greatly limits off-campus activities. In order for PA to run as a community-based program, juveniles need to get into the community and visit the schools they will be attending, visit the community providers with whom they will be living, and submit employment applications prior to their release. These activities will enhance their transition back into the community.

In conclusion, juveniles committed to ADJC are among Arizona's most troubled. They face serious challenges when they are released to the community from ADJC secure facilities. In response to a request from several Arizona juvenile court judges to hold juveniles on parole more accountable, ADJC established a structured process in 1999 which led to an increase in the number of parole revocations. ADJC anticipated that growth and implemented a Parole Assessment Program in 2001 to provide an intensive assessment of the juveniles that were struggling while on parole. Overall, the PA program has succeeded in helping ADJC hold parolees accountable, while greatly reducing their stay in secure ADJC facilities. Juveniles placed in the PA program have failed many different community-based interventions in the past, and the ADJC PA program provides a chance for the juvenile, the parents, and the parole officer to regroup and, as a result of a thorough assessment, make a more focused, a more individually tailored, and hopefully a more successful attempt to reintegrate the juvenile into his/her community.

B. Additional Topics

In the course of planning the *Seventh Annual Outcome Study*, members of the ADJC Leadership Team, Secure School Superintendents, and managers within the Community Corrections Division were consulted with regard to our research agenda. This consult was related directly to Director Gaspar's and the Leadership Team's desire to convert ADJC recidivism rates into useful management information. Indeed, what sets this project apart from other recidivism analyses we have seen is the active participation of ADJC staff in the analysis of recidivism rates. The participation of correctional managers and staff in the analysis of recidivism is a bold step, and it ensures that their experience and ideas are included in the scope of the research. Their participation helps invigorate the notion of recidivism by involving institutional and line staff in this important topic. Results from the last *Outcome Evaluation Report* were posted in the ADJC Central Office and throughout all of the ADJC secure schools and parole offices. In addition to their agenda of questions, R/D staff identified issues that we deemed relevant and important. Listed below is the agenda of questions and the associated findings.

1. A proposal has been made that juveniles adjudicated on misdemeanor level offenses be retained at the county and not be committed to ADJC. What data exists on the recidivism rates of misdemeanants?

We found no difference in the recidivism rates of juveniles committed to ADJC on misdemeanors or felonies. In fact, 83% of the misdemeanants and 83% of the felons succeeded in not returning to custody within one year. Felons (4.5%) were committed to ADC at more than double the rate of misdemeanants (2%), however. Less than one-third (28.3%) of the 2001 releases were originally committed to ADJC on a misdemeanor as

their most serious offense. It is difficult to relate these findings to the proposal that misdemeanants remain at the county level. Perhaps the LeCroy-Milligan study of the recidivism rate of juveniles assigned to the Pima County Probation Department can shed additional light on this issue.

2. Judges sometimes commit juveniles to ADJC just a few months before they turn 18 years old. What was the recidivism rate of that group of juveniles?

Older juveniles had higher success rates. In fact, 95.2% of the juveniles committed to ADJC when they were 17.5 years of age or older succeeded in not returning to custody within one year. Caution should be exercised when interpreting these results because some of the older releases may have been rearrested as adults and subjected to adult criminal justice processing, which requires a longer time to complete.

3. Recently, interest has been expressed in juveniles transferred[15] to the Arizona adult court system. What were the characteristics of the juveniles released from ADJC transferred to the adult system and subsequently sentenced to ADC?

We looked at the 1999 releases to answer this question because we wanted to provide ample time (36 months) for the juveniles to recidivate. Almost all (98.6%) of the 1999 releases subsequently transferred to the adult system and sentenced to ADC were male, and almost three quarters (71.4%) were minorities. More African Americans and Mexican Nationals were in this group than would be expected given their percentages in the 1997 release cohort. Meanwhile, fewer Caucasians, Hispanics, and Native Americans were in this group. A great number (80%) of these juvenile offenders were from Arizona's urban counties (Maricopa and Pima). Many (61.4%) had been committed to ADJC previously as property offenders. We found that 8.8% of the juveniles committed

to ADJC on property offenses were transferred to adult court and sentenced to ADC, a higher rate than any other group, and a rate 3.7 times higher than that of drug offenders. The ADJC releases transferred to adult court and sentenced to ADC started their delinquency early. Fully 84.3% of them were 13 or younger at their first referral. Starting early meant that they accumulated more adjudications. In fact, more than one-third (39.9%) of them had six or more adjudications. Almost all (94.1%) of them had substance abuse problems, and more than three-quarters (82.4%) had school problems as well. Juvenile offenders with school problems were more likely (+2%) to be transferred and sentenced to ADC than those without school problems. The transferred juveniles tended to be from financially secure, yet troubled homes. Indeed, more (+6%) of the 1999 releases who were transferred and sentenced to ADC came from homes characterized by domestic violence than was true of a comparable group of 1997 releases.

4. The Department has increased its emphasis upon working with juveniles to help them achieve an absolute discharge. What was the success rate of those that were absolutely discharged?

More than three quarters (83.3% or 70) of the 84 juveniles released from secure care in 1999 and subsequently granted an absolute discharge succeeded in not returning to custody. Juveniles granted an absolute discharge were tracked for 5 to 48 months from their absolute discharge award date, and many (28.6%) of them were free in the community for at least 36 months. Only three (3.6%) of the 1999 releases granted an absolute discharge were sentenced to ADC, while 11 (13.1%) were returned to ADJC as recommitments. As shown in Table 6, 43.9% of the juveniles released in 1999 recidivated and 56.1% did not. The 83.3% success rate for the juvenile awarded an

absolute discharge compares favorably to the 56.1% success rate of all juveniles released in 1999.

5. ADJC has a separation program which is designed to remove eligible juveniles from the general population. Many of the juveniles admitted to the separation program pose serious behavioral problems. Is there a relationship between the number of times juveniles are admitted into separation and their recidivism rates?

No. We were unable to reject the null hypothesis. In other words, using the chi-square statistic, we found no relationship between the number of times a juvenile was admitted to separation and his/her recidivism rate. To research this question, we examined the juveniles released in 2001. We found that more than half (57.8%) of them had never been admitted to separation, approximately one-third (34.1%) had been admitted to separation one to five times, and less than 10% had been admitted to separation six or more times**.** A total of 16% of those never admitted to separation recidivated, while 21% of those admitted to separation recidivated at least once.

6. It seems that a high percentage of the juveniles committed to ADJC have special education issues. These juveniles pose special challenges to education and treatment staff as they try to teach them appropriate non-criminal problem solving skills. Is there a relationship between special education and recidivism?

Yes. Using the chi-square statistic, we were able to reject the null hypothesis for this question insofar as we found a relationship between special education status and recidivism. Indeed, 104 of the juveniles released in 2001 were categorized as special education and 27.9% recidivated, while only 16.2% of the ADJC releases categorized as non-special education recidivated.

7. An important issue in juvenile justice is known as disproportionate minority contact (DMC) and it refers to the tendency for minority juveniles to have more contact with the juvenile justice system than Caucasian youth. Is there any support for the DMC hypothesis in ADJC recidivism data?

Yes. We found support for the DMC hypothesis in the recidivism rates of our 2001 releases. Indeed, more African American, Hispanic and Native American juveniles were returned to custody than would be expected given their respective percentages in the 2001 ADJC release cohort. Furthermore, an analysis of recidivism rates (recidivism per 100 releases) revealed a Native American rate 38% higher, an African American rate 22% higher and a Hispanic rate 16% higher than the Caucasian rate.

4. SUMMARY OF NATIONAL RESEARCH ON JUVENILE OFFENDER RETURN TO CUSTODY

In the past, staff from NCCD have endeavored to report on how ADJC's recidivism rates compare to others. Unfortunately, they were unable to provide that information in time for the publication of this report. For the time being, the report includes the results of research they conducted in 2002. The report will be updated as soon as they complete their latest work.

Nationwide research on recidivism can help inform and provide the necessary context for understanding the short and long-term outcome evaluation findings on releases from the Arizona Department of Juvenile Corrections. This section provides a summary of outcome research conducted by juvenile corrections agencies across the country, as well as national research conducted on outcomes for juvenile offenders. Further detailed information on this research can be found in two earlier reports prepared for ADJC by

NCCD: *National Comparisons of Recidivism Measures* (October 1999) and *Research on Recidivism and Serious Juvenile Offenders: A Review of the Literature* (December 1999).

A. State Comparisons of Recidivism Rates

Like ADJC's outcome evaluation research described in this report, many juvenile corrections agencies across the nation are collecting and reporting outcome data that are intended to measure the effectiveness of their programs. The primary outcome in which decision makers and citizens are most interested is recidivism. Recidivism can be defined and measured in many ways, but it generally refers to the repetition of delinquent or criminal behavior. This section presents a summary of selected data on recidivism rates from state juvenile corrections agencies across the country. These data are used to make comparisons, where possible, between Arizona's rates and those of other states.

1. Measuring and Comparing Recidivism as an Outcome

States typically use one or some combination of three distinct methods of measuring recidivism: juvenile re-referral or adult arrest, juvenile re-adjudication or adult conviction, and juvenile recommitment or adult sentence. Arizona does not currently collect data that can be used to compare recidivism rates on re-referrals/arrests or readjudications/convictions. To generate data on these outcomes, ADJC would need to be provided with or have access to law enforcement data, juvenile court data, and adult court data.

Although differences in the definitions of recidivism and other technical issues of measurement (e.g., similar follow-up periods) limit comparisons, ADJC does have data that enables comparisons of its recidivism rates with the rates of other states using recommitments and sentences to adult corrections outcomes. Recommitment to a juvenile justice program or adult corrections refers to those juveniles who, after release from a state juvenile corrections facility, are returned to custody in a state juvenile corrections facility or to a state adult corrections facility following a sentence in an adult court.

The principal source of information on recidivism rates from state juvenile corrections agencies across the country was a survey conducted by the Florida Department of Juvenile Justice's Bureau of Data and Research and presented in its report, entitled *National Comparisons from State Recidivism Studies.* The findings from the report were presented originally in ADJC's *Fourth Annual Report* on its outcome evaluation research (January 2001).

NCCD attempted to update recidivism rates from the state agencies that had reported rates previously using a definition comparable definition to that of ADJC. To do so, NCCD contacted each of these agencies by telephone to obtain the latest rates and reports, when available. From this effort several conclusions can be drawn about the conduct of outcome evaluation research by juvenile corrections agencies across the country.

First, only a limited number of agencies conduct outcome evaluation research on a continuing (e.g., annual) basis. As a result, updated rates are available only from a few state agencies. In addition, some agencies modify their definitions of recidivism over time. For example, some juvenile corrections agencies have narrowed their definition to include only outcomes in the juvenile justice system excluding those that may have occurred in the adult criminal justice system. Others have expanded their definitions such as adding an adult probation sentence to measured outcomes within the criminal justice system. The next section of this report presents the most recent recidivism rates from ADJC and other state juvenile corrections agencies using comparable definitions and follow-up periods.

2. Selected Comparison of Recidivism Rates from State Juvenile Corrections Agencies

Figure 10 presents recidivism rates for Arizona, North Dakota, Louisiana, Florida, and Texas based on returns to custody in a juvenile or adult corrections program within a 12 month follow-up period. Figure 10 presents some multiple rates, since North Dakota, Florida, and Texas also conduct comparable outcome evaluations on an annual basis. From Figure 10, Arizona's return-to-custody rates for its 1996-2000 release cohorts ranged from a low of 20.1% (1999) to a high of 27.5% (2000). For the four most recent release cohorts for which comparable definitions were used, Figure 10 shows that North Dakota's rates were lower, ranging from 6.6% (FY 1996-1997) to 13.6% (FY 1992-1993). In addition, Figure 10 shows somewhat higher rates for Louisiana, Florida, and Texas. Louisiana reported a return-to-custody rate of 28.1% for its 1995 release cohort.

In addition, Texas reported the highest rates ranging from a low of 26.9% (1998) to a high of 31.1% (2000). Figure 10 shows higher return-to-custody rates for Florida which ranged from a low of 22.1% (FY 1999-2000) to a high of 29.5% (FY 1995-1996).

Figure 10
Return to Custody Rates in a Juvenile or Adult Corrections Program
after Release from a Juvenile Corrections Program
for States with a 12-Month Follow-up Period

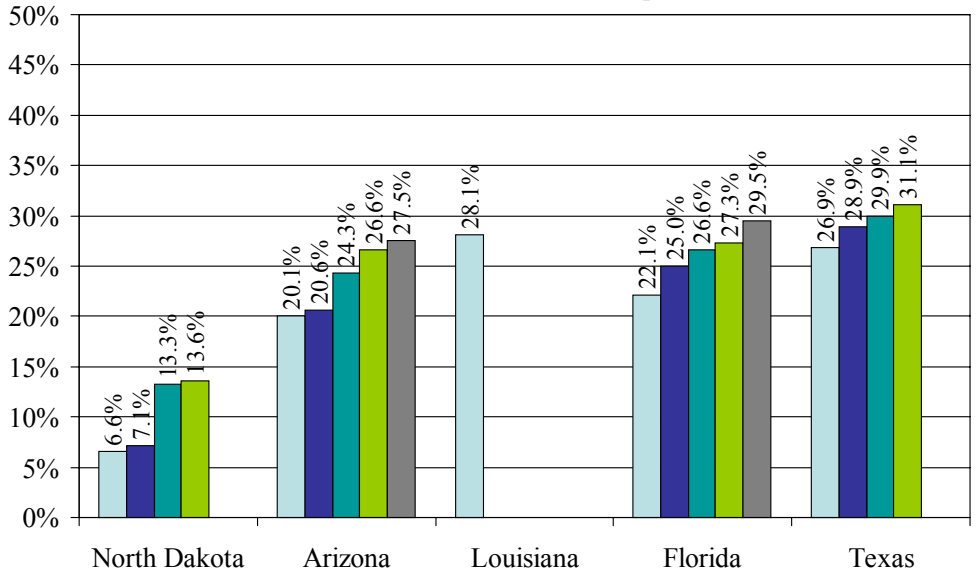


Figure 11 presents recidivism rates for Arizona, Wisconsin, and Texas using the return-to-custody definition within a 24 month follow-up period. Figure 11 shows that Arizona's rates ranged from a low of 34.8% (1996) to a high of 38.8% (1999). These rates were lower than Wisconsin's rates which ranged from a low of 42.4% (1990) to a high of 43.6% (1992). Figure 11 also shows that Arizona's rates were lower than the Texas rates which ranged from a low of 41.5% (1998) to a high of 44.2% (1999).

Figure 11
Return to Custody Rates in a Juvenile or Adult Corrections Program
after Release from a Juvenile Corrections Program
for States with a 24-Month Follow-up Period

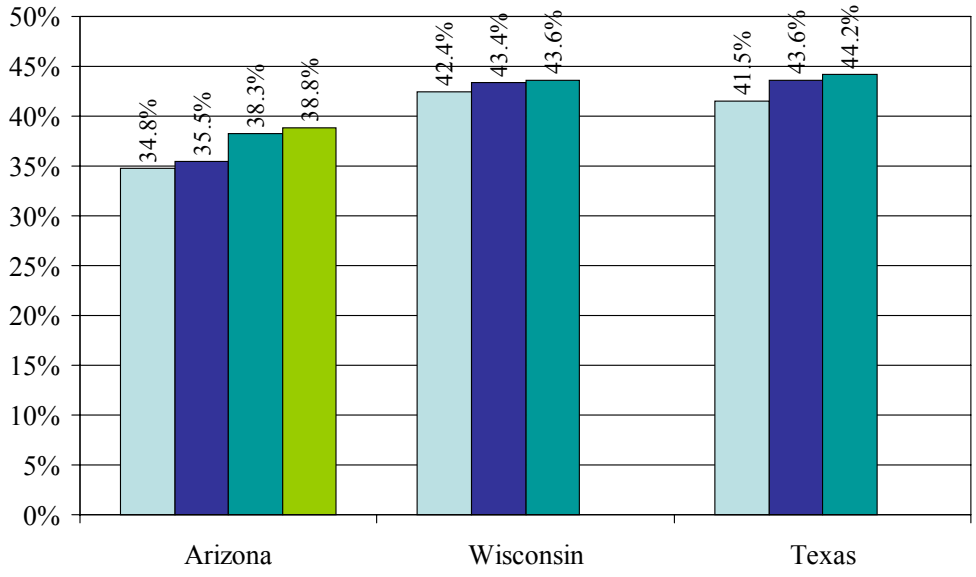
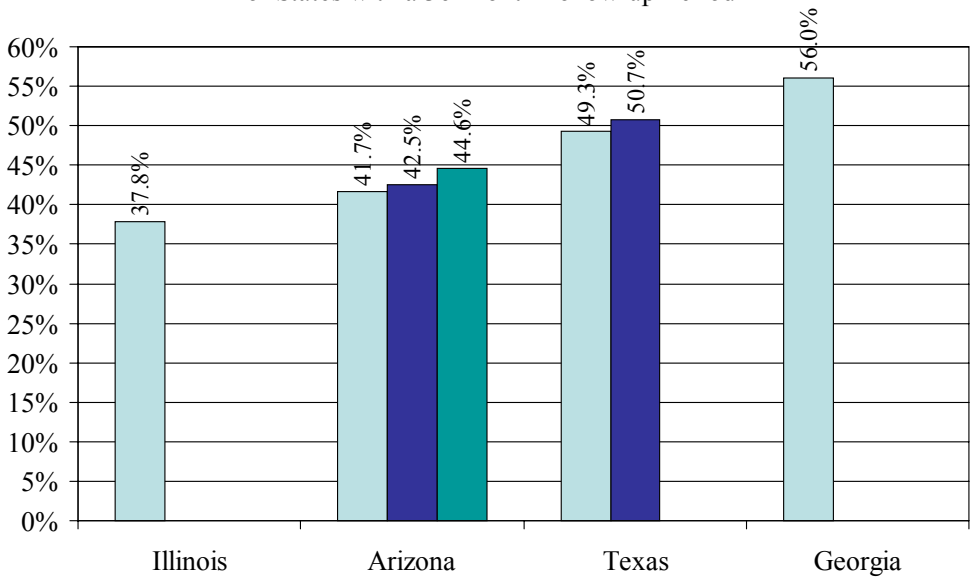


Figure 12 presents recidivism rates for Illinois, Arizona, Texas, and Georgia using the return-to-custody definition within a 36-month follow-up period. Figure 12 shows that Arizona's rates ranged from a low of 41.7% (1996) to a high of 44.6% (1998). It also shows that Arizona's rates were higher than Illinois' rate reported at 37.8%. However, Figure 12 shows that Arizona's rates were lower than those reported by both Texas and Georgia. Texas reported higher rates of 49.3% (1998) and 50.7% (1997). Figure 12 shows that Georgia reported the highest rate at 56.0%.

Figure 12
Return to Custody Rates in a Juvenile or Adult Corrections Program
after Release from a Juvenile Corrections Program
for States with a 36-Month Follow-up Period



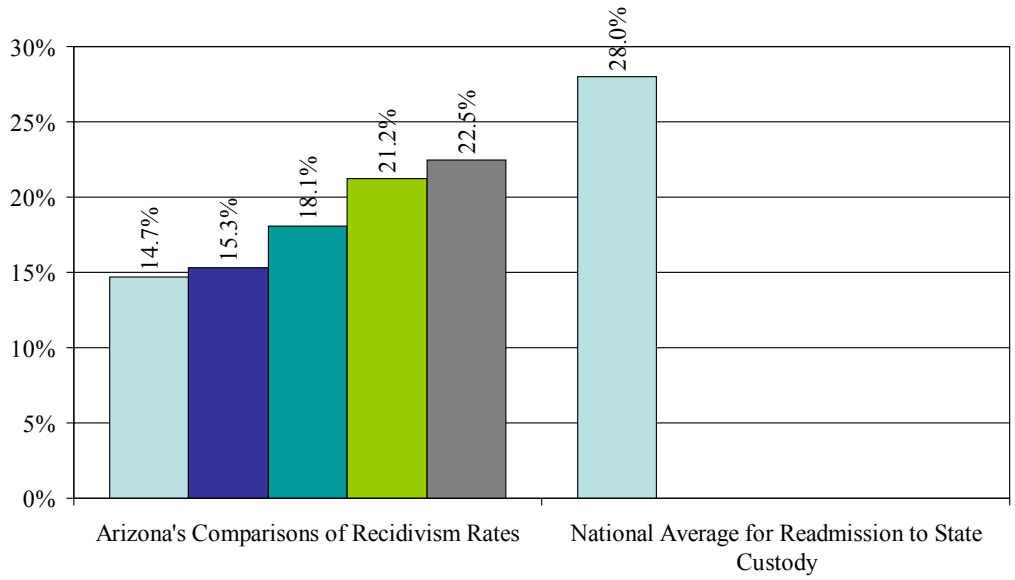
3. Comparisons Using Data from the State Juvenile Corrections Reporting Program

As part of a national research effort supported by the U.S. Department of Justice, NCCD created a national data base that contains individual-level data on juvenile admissions to and releases from state custody. The research program and data base, the State Juvenile Corrections Reporting Program (SJCSRP), were developed to facilitate reporting on the numbers and characteristics of juveniles taken into custody. Included in the data base is information on readmissions to state juvenile corrections systems. The most recent report, *Juveniles Taken Into Custody, FY 1995 Annual Report,* contains information that is useful in comparing rates with ADJC outcomes.

Using the SJCSRP data, the national average for youths under 17 years of age (in 26 states with an upper age of juvenile court jurisdiction of 17 reporting releases in CY

1993) who were readmitted to state juvenile corrections systems in the 12 months following their release from state custody was 28%. Arizona's rates for readmission (parole revocations and recommitments) to ADJC within 12 months after release were 15.3%, 18.1%, 21.2%, 14.7%, and 22.5% for the 1996, 1997, 1998, 1999, and 2000 release cohorts respectively. These rates compare favorably to the national average of 28% as shown in Figure 13.

Figure 13
Comparison Between the Average Readmission Rates for States Providing Data to the State Juvenile Corrections System Reporting Program and Arizona Department of Juvenile Corrections Return-to-Custody Rates



B. Interpreting Comparisons of Recidivism Rates

The comparisons of state return-to-custody rates presented above show that Arizona's rates compare very favorably to those of most other states using the same definitions of recidivism. These favorable results, in fact, may reflect the relative effectiveness of the

programs and services employed with juvenile offenders in Arizona compared with those employed in other states. However, these comparisons have a number of limitations that require interpretations to be made with considerable caution.

First, drawing conclusions on differential effectiveness of programming and services is limited by the fact that information on the relative types, intensity, and duration of interventions from state to state is not readily available.

In addition, using the return-to-custody definition of recidivism may underestimate the actual rates of subsequent delinquent or criminal behavior to unknown and variable degrees from state to state. This underestimation is due, in part, to the number of delinquent or criminal acts that remain unreported or cannot be attributed to a particular offender. Return-to-custody definitions also will underestimate overall recidivism for some offenders committing subsequent crimes but receiving dispositions not included in this definition such as sentences to adult probation.

Finally, differences in return-to-custody rates may result from differences in the characteristics of juvenile offenders under the jurisdiction of state agencies. For example, differences in the frequency and severity of offenses, such risk factors as age of onset of offending, and criminogenic factors in the juvenile's environment may all affect responsivity to whatever programs and services may be employed by state corrections agencies.

For all of these reasons, conclusions from state to state comparisons must be drawn with considerable caution, and future recidivism research should be conducted so that additional information on across state differences (e.g., offender characteristics, differential programs, and services) can be accounted for. Most importantly, comparisons should focus primarily on within-state differences in recidivism rates. Future research should focus primarily on uncovering the underlying factors (e.g., changes in populations, policies, or practices) that are contributing to changes in rates over time. This information is the most useful for administrators and managers who are attempting to proactively develop and implement strategies that can improve their agencies' effectiveness over time.

5. CONCLUSIONS

The latest figures show that 82.2% of the juveniles released in 2001 did not recidivate within one year of their release, and 64% of the juveniles released in 2000 did not recidivate within two years of their release. The success rates are impressive because many of these juvenile offenders constitute Arizona's most troubled youth, and we are tracking them during a time when they are most likely to commit additional crimes. The latest results also show that only 19.8% of the juveniles released in 1999 were sentenced to an Arizona prison within three years of their release. This represents the third consecutive decline in the percentage of ADJC releases sentenced to prison within three years. This achievement is impressive when one considers that the estimated[16] monetary value of saving one high-risk youth from becoming a career criminal ranges between $1.7 and $2.3 million.

Comparisons of ADJC return-to-custody rates with those of other states show that Arizona's rates compare very favorably with those of most other states using the same definitions of recidivism. These favorable results, in fact, may reflect the relative effectiveness of the programs and services employed with juvenile offenders in Arizona compared with those employed in other states.

At least three follow-up research actions will occur as a result of what we learned from this study. First, NCCD staff will endeavor to update the comparative measures of recidivism from other locations. This will enable us to place our numbers into a context—something that was done in previous outcome studies. Second, the R/D section will develop the exploratory measures of institutional effectiveness introduced in this report in accordance with the recently obtained computer software package and the needs of the agency. Third, the R/D section will expand the survival analysis time period presented in this report to ascertain trends in recidivism of youth while on parole, thus providing empirical research results that may help guide the actions of ADJC Parole Officers.

6. NOTES

[1] Mark Cohen, *The Monetary Value of Saving a High Risk Youth*, Journal of Quantitative Criminology, 1998.

[2]In fact, a sizable percentage (77.2%) of ADJC commitments in 2001 were on probation or intensive probation at the time of their commitment.

[3] A total of 158 juveniles were released when they turned 18 years old. All but one were recorded as being released on their birthdays; the remaining one was recorded as being released the day after his/her birthday.

[4] Hispanic is treated as a race rather than an ethnicity in Arizona; thus, it is a category separate from Caucasian, African American, etc.

[5] Level data are unavailable for the 1996 – 1998 release cohorts.

[6]Robert Barnoski, Standards for Improving Research Effectiveness in Adult and Juvenile Justice, Washington State Institute for Public Policy, December 1997.

[7] The savings calculated by Cohen are for external costs only; he included such costs as prison costs and excluded other significant costs, including those incurred by crime victims.

[8] Florida Department of Juvenile Justice and The Justice Research Center. *The 2003 PAM Report: A Two Year Analysis*, December 2002.

[9] The recidivism measure we employed included only those who returned to custody to ADJC or ADC. The chosen measure of recidivism, therefore, precluded other routes through which juveniles could recidivate—namely, a probation judgment handed down by an adult court in Arizona, or incarceration or probation outside of Arizona. In other words, research has shown that juveniles who are 17 years and over have a lower chance of recidivating than those under 17 years. The implication of this finding for our logistic regression is that the coefficient of age at release would be smaller than what it should be. Therefore, the decrease in recidivism associated with the increase in age would be smaller than is actually the case. This problem can, however, be mitigated to some extent by the exclusion of juveniles over 17 years of age, which we have done.

[10] If the actual was less than the estimated, the lower limit of the confidence interval was used to calculate the difference, while the upper limit of the confidence interval was used if actual recidivism rate was above the estimated rate.

[11] Please note that Northwest Parole registered no recidivism, as it was not commissioned until September 1, 2002. Also, the figures in Table 11 do not reflect interstate compact, since they are not included in the table below.

[12] See David W. Hosmer and Stanley Lemeshow, Applied Survival Analysis: Regression Modeling of Time to Event Data, Wiley Science, 1999.

[13] A juvenile can also be discharged; however, that action is initiated independent of the revocation process.

[14] Juvenile could be counted more than once.

[15] Most of the juveniles in Arizona who are sent to adult court for processing are direct filed by a county attorney, and only a minority are transferred by a juvenile court. Nevertheless, most interested observers use the term *transfer* to refer to both groups of juvenile offenders, so that terminology will be used in this report.

[16] Cohen, (1998).